



I-CNS 2002

Surface CNS

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Airport Surface



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- Unique properties of the airport surface
 - Rapid state change
 - Large number of elements
 - Wide spectrum of element capabilities
 - Hostile RF propagation environment
- Two classes of applications
 - Safety: Prevent runway collisions
 - Capacity/Efficiency: Airport surface traffic management



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Key R&T Issues



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- Identify key research and technology issues of both near-term (now to 2010) and far-term (beyond 2010) impact.
 - Communications:
 - Airport surface information at the network layer
 - Navigation:
 - Is LAAS necessary for navigation on airport surface?
 - Surveillance:
 - Quality of surveillance needed to drive automatic algorithms for safety and capacity



Surface CNS Current Work



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- Identify known work being done to address R&T issues in the topical area being discussed, and organizations doing the work.
 - RTCA Free Flight Select Committee, Free Flight Working Group, Surface Management System Working Group
 - Recently prepared report, “Surface Traffic Management (STM) Initiatives Related to the NAS Concept of Operations”, on research work being done on airport surface
 - Examples:
 - FAA Safe Flight 21
 - FAA Runway Incursion Reduction Program
 - NASA Surface Management System Program
 - NASA runway safety program
 - And many other programs



Surface CNS Unaddressed Issues



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- Identify issues not being addressed by any known R&T effort, as well as areas where current work is inadequate or underfunded.
 - The integration of multiple applications on the flight deck and on the ground
 - CNS performance requirements of integrated applications
 - The data networking implications of this integration



Surface CNS Priorities



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- Prioritize the key R&T issues needing attention.



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Recommended Approach



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- Recommend approaches to address the key R&T needs, organizations which might address these needs, needed collaborations or cooperative efforts, etc.
 - NASA consult with the RTCA Working Group Chairs
 - Get their recommendations and/or inputs